

**Meeting of the Central Valley Flood Protection Board
August 26, 2010
Staff Report – Encroachment Permit
Port of West Sacramento
OPDE Solar Array Renewable Energy Project, Yolo County**

1.0 – ITEM

Consider approval of Permit No. 18596 (Attachment B)

2.0 – APPLICANT

Port of West Sacramento
1110 West Capital Avenue
West Sacramento, CA 95691

3.0 – LOCATION

The project is located in West Sacramento, south of I-80 and west of Jefferson Boulevard, along Sacramento River Deep Water Ship Channel (Navigation Levee), Yolo County (see Attachment A)

4.0 – DESCRIPTION

To place 486 solar tracker arrays (44 ft wide by 15 ft tall, each holding up to 56 solar panels) on the surface of each of four sites along the west bank of the Sacramento River Deep Water Ship Channel (Navigation Levee) which also functions as the east levee of the Yolo Bypass. Each site is approximately 500 ft by 3,220 ft comprising of the areas that have been filled approximately 15 ft deep with dredge material from construction and maintenance dredging of the ship channel. Material for leveling and filling the two northern sites will be from a dredge placement site further to the south on the ship channel. Operation in the borrow area will comply with existing operating agreements between the Port and the USACE. The solar arrays, connected in rows perpendicular to the Navigation Levee, are interconnected to an approximately 32,500 ft long electrical system running parallel to the Navigation Levee and ultimately connected to PG&E. The electrical system is proposed to be all underground and only being above surface elevation at the point of connection to PG&E.

5.0 – PROJECT ANALYSIS

Otras Producciones de Energia Fotovoltaica (OPDE) is proposing to construct four 6,000 kW grid-paralleled solar photovoltaic electric renewable generation systems adjacent to the Port of West Sacramento's Deep Water channel in Yolo County, California to provide an estimated 48 Gigawatt hours of renewable electricity generation annually. The project site is located on 160 acres (on four component parcels between 36 and 40 acres in size) owned by the Sacramento-Yolo Port District. The solar arrays will be constructed on lands adjacent to, and east of the navigation levee on the west side of the Sacramento Deep Water Ship Channel – areas which are currently used for storing and drying dredge material from channel maintenance and deepening operations.

Prior to equipment installation, each of the four approximately 500 ft by 3,220 ft foundation pad areas will be compacted to 90 percent and graded to create a level pad. All soils for the foundation pads will be borrowed from other portions of the site currently containing dredge materials and no more than ten feet of soil will be removed from any existing dredge-material deposition area – well within the typical depth of tillage and dredge placement operations (generally fifteen feet deep or more).

Solar panels will be installed on a steel support structure attached to a motorized frame that allows the entire tracker assembly – which holds up to 56 solar panels – to move in two directions to optimally track the path of the sun. Eighty-one tracker assemblies will produce 1000 KW of power and each component site parcel will contain approximately 486 tracker assemblies with 27,216 solar panels. The overall dimensions of each tracker are 44 feet wide by 15 feet tall from the ground surface, with a total solar panel surface area of 970 sq ft. The project also includes installation of a small step-up transformer in or near the base of each central inverter to increase the output voltage of the power generated by the project to a level suitable for local power collection within the property (i.e. 12.5 kilovolts). Underground cables will connect each tracker and/or inverter to a feeder circuit, which would in turn connect to the project substation or switchyard. The details of connection to PG&E system are not available at the time of preparation of this document. Therefore, the applicant needs to apply for a separate permit application.

Each solar panel array will be separated by 55 feet of open space to prevent shading between arrays and preserve the natural environment. The actual physical equipment footprint of the project in contact with the ground will cover less than five percent of the surface area of the site. The balance of the site will remain native vegetation with limited permanent disturbance.

5.1 – Hydraulic Analysis

The applicant submitted a hydraulic report prepared by MBK Engineers dated September 18, 2009. In summary, it is concluded that raising and strengthening portions of the federal project levee system protecting West Sacramento and implementing in-channel erosion protection measures proposed by the City would not result in any significant, adverse hydraulic impacts to other sub-basins protected as part of Sacramento River Flood Control Project (SRFCP).

5.2 – Geotechnical Analysis

The applicant submitted a geotechnical report prepared by MatriScope Engineering Laboratories, Inc., dated April 27, 2010. The existing site grade varies from 11 to 37 feet above sea level. Recommendations related to site grading, placing engineering fill and excavation are presented. Compaction criterion is expected to be at least 90% relative compaction.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U.S. Army Corps of Engineers endorsement has not been received but is anticipated to be received prior to the August 26, 2010 Board meeting.
- The West Sacramento Reclamation District No. 900 endorsed the project with no condition.

7.0 – PROPOSED CEQA ANALYSIS

Board staff has prepared the following CEQA findings:

The Board, as a Responsible Agency under CEQA, has reviewed Initial Study/Mitigated Negative Declaration (IS/MND, June 2010) and Mitigation Monitoring and Reporting Plan (SCH Number: 2010062026) for the OPDE US CORP. Solar Farm Conditional Use Permit, prepared by the lead agency, City of West Sacramento. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2010/8-26-2010.cfm>

under a link for this agenda item. The documents are also available for review in hard copy at the Board and City offices.

The City of West Sacramento determined that the project would not have a significant effect on the environment and filed a Notice of Determination on August 6, 2010 with the State Clearinghouse and the Sacramento County Clerk. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Initial Study/Mitigated Negative Declaration and address impacts to air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, and noise.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

The proposed development will have minimal effects on flow changes and thus It will have minimal impact on State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Future events including changes in hydrology and climate may increase flows which in turn would increase the flood risk for the project. However, practically the effects of reasonable projected future events on the development should be minimal. Since the actual physical equipment footprint of the project in contact with the ground will cover less than five percent of the surface area of the site.

9.0 – STAFF RECOMMENDATION

Staff recommends that the Board adopt the CEQA findings, approve the permit conditioned upon receipt of a favorable U.S. Army Corps of Engineers comment letter, and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Maps and Photos
- B. Draft Permit No. 18596
- C. Project Plan and Layout

Report Completed by:	Ali Porbaha
Design Review:	Ali Porbaha
Environmental Review:	Andrea Mauro and James Herota
Document Review:	Len Marino, Steve Dawson

ATTACHMENT A

Location Maps and Photos

Location Map



Vicinity Map



Pictures from the Site



No.1 Looking southeast from northwest corner of Site 1



No. 2 Looking east from southern portion of Site 1

Source: Applicant

ATTACHMENT B

Draft Permit No. 18596

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18596 BD

This Permit is issued to:

Port of West Sacramento
1110 West Capital Avenue
West Sacramento, California 95691

To place 486 solar tracker arrays (44 ft wide by 15 ft tall, each holding up to 56 solar panels) on the surface of each of four sites along the west bank of the Sacramento River Deep Water Ship Channel (Navigation Levee) which also functions as the east levee of the Yolo Bypass. Each site is approximately 500 ft by 3220 ft comprising of the areas that have been filled approximately 15 ft deep with dredge material from construction and maintenance dredging of the ship channel. Material for leveling and filling the two sites will be from a dredge placement site further to the south on the ship channel. Operation in the borrow area will comply with existing operating agreements between the Port and the USACE. The solar arrays, connected in rows perpendicular to the Navigation Levee, are interconnected to an approximately 32,500 ft long electrical system running parallel to the Navigation Levee and ultimately connected to PG&E. The electrical system is proposed to be all underground and only being above surface elevation at the point of connection to PG&E. The project is located in West Sacramento, south of I-80 and west of Jefferson Boulevard (Section 1,12,13,14,23,24&36, T7&8N, R3E, MDB&M, Reclamation District 900, Sacramento Deep Water Channel, Yolo County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18596 BD

THIRTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion

FOURTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

SIXTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources, Reclamation District 900 or any other agency responsible for maintenance.

SEVENTEEN: The Central Valley Flood Protection Board, Department of Water Resources and Reclamation District 900 shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

EIGHTEEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

NINETEEN: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

TWENTY: The permittee shall contact the Flood Project Integrity and Inspection Branch by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

TWENTY-ONE: Density tests by a certified materials laboratory will be required to verify compaction of backfill after compaction is complete.

TWENTY-TWO: Backfill material for excavations within the levee section and within 10 feet of the levee toes shall be placed in 4- to 6-inch layers, moisture conditioned above optimum moisture content, and compacted to a minimum of 90 percent relative compaction as measured by ASTM Method D1557-91.

TWENTY-THREE: Backfill material for excavations within the levee section shall be free of stones or lumps that exceed 3 inches in greatest dimension, organic matter, or other unsatisfactory material and shall be compacted to at least 90 percent relative compaction as measured by ASTM Method D1557-91.

TWENTY-FOUR: Compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the levee section or within 10 feet of the levee toe.

TWENTY-FIVE: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Integrity and Inspection Branch upon completion of the project.

TWENTY-SIX: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

TWENTY-SEVEN: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board, at the permittee's or successor's cost and expense.

TWENTY-EIGHT: All fencing, gates and signs removed during construction of this project shall be replaced in kind and at the original locations. If it is necessary to relocate any fence, gate or sign, the permittee is required to obtain written approval from the Central Valley Flood Protection Board prior to installation at a new location.

TWENTY-NINE: All temporary fencing, gates and signs shall be removed upon completion of the project.

THIRTY: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY-ONE: All debris generated by this project shall be disposed of outside the floodway and off the channel.

THIRTY-TWO: The details of connection to PG&E system are not available at the time of preparation of this document. Therefore, the applicant needs to apply for a separate permit application.

THIRTY-THREE: Upon completion of the project, the permittee shall submit as-built drawings to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite LL30, Sacramento, California 95821.

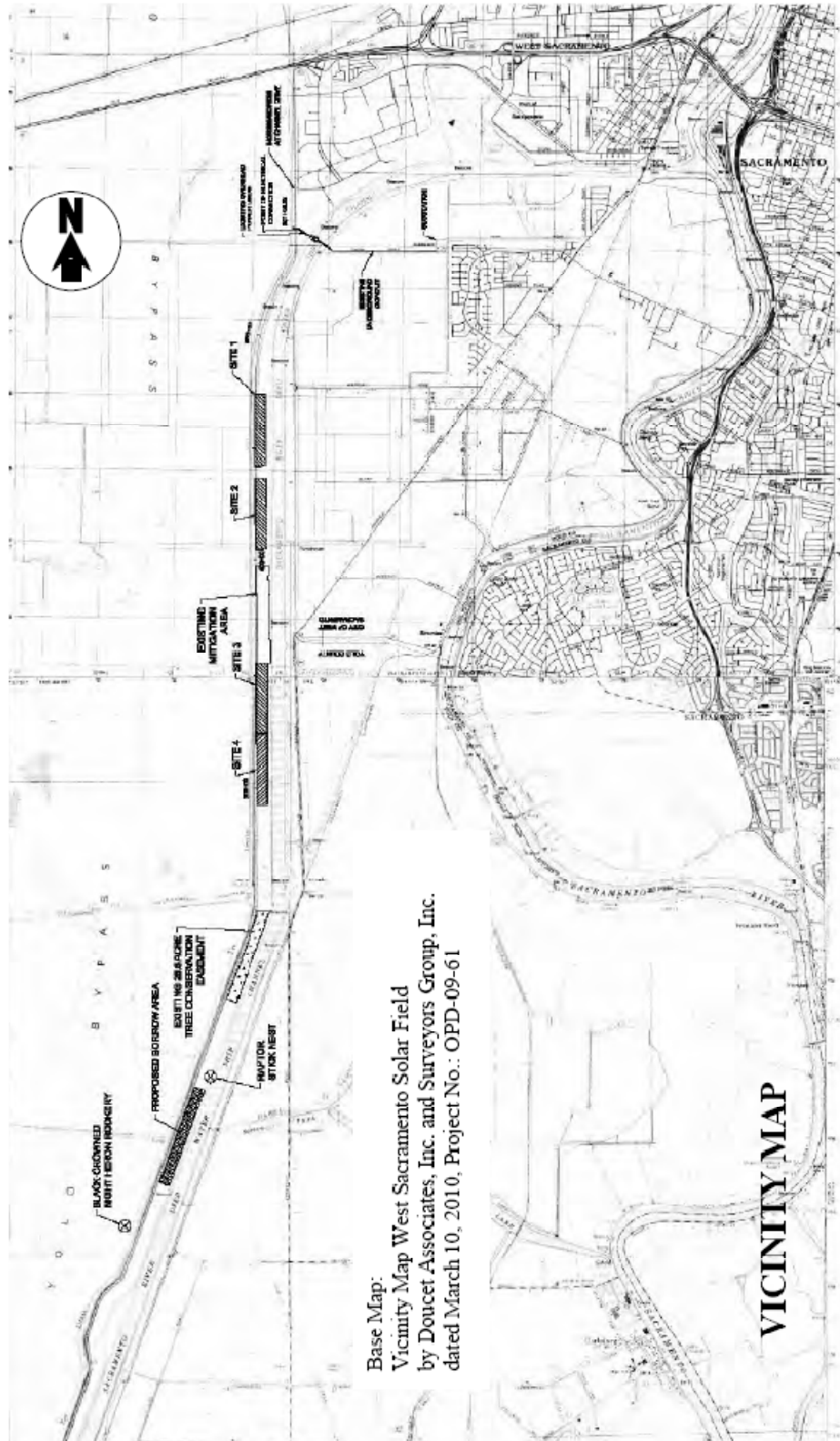
THIRTY-FOUR: The permittee shall comply with all conditions set forth in the letter from the Department of Army dated XXXXHH, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

ATTACHMENT C

Project Plan & Layout

Project Plan

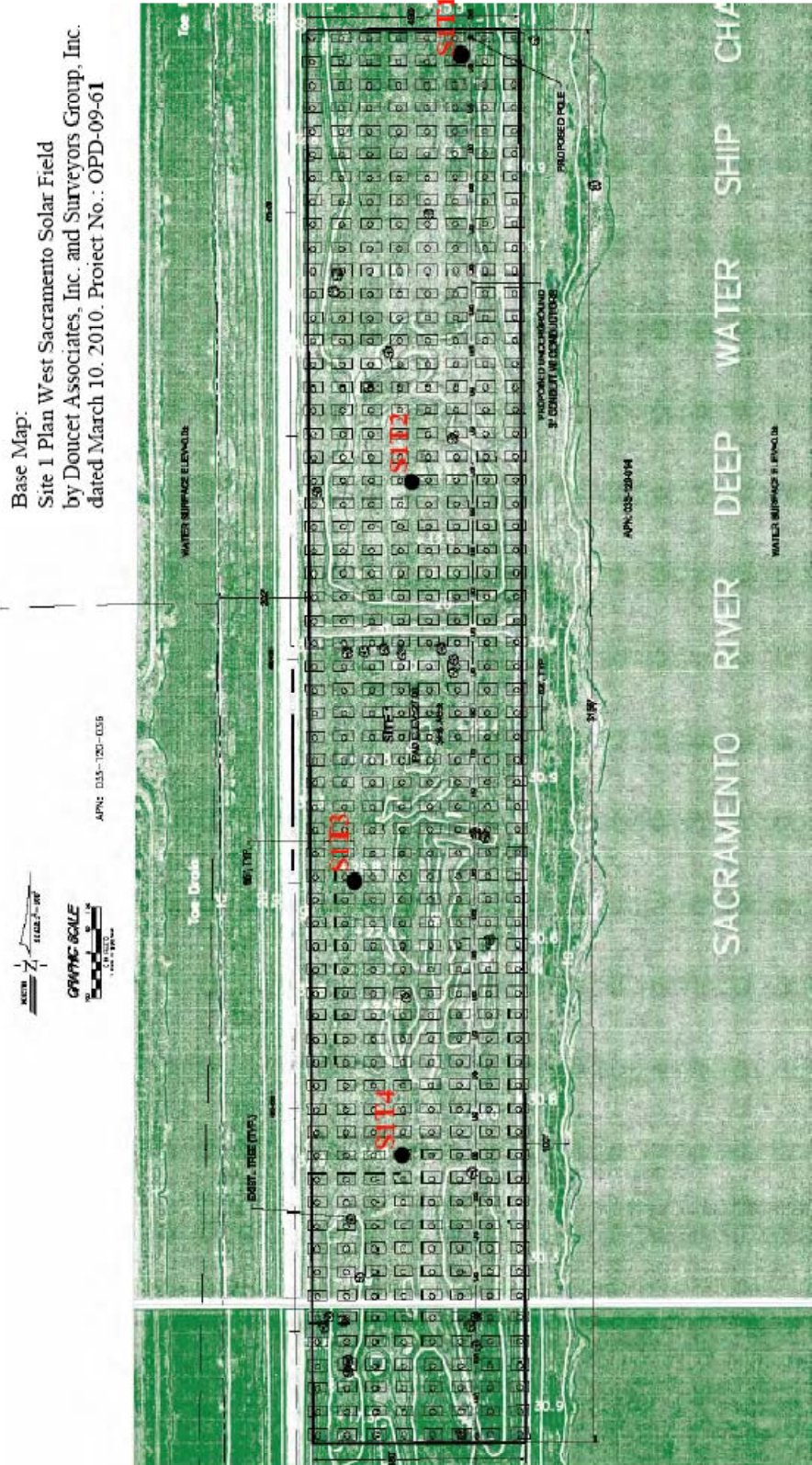
(Source: MatriScope)



Base Map:
 Vicinity Map West Sacramento Solar Field
 by Doucet Associates, Inc. and Surveyors Group, Inc.
 dated March 10, 2010, Project No.: OPD-09-61

Layout of Site 1

(Source: MatriScope)



Legend: ● **S111** Approximate Test Pit Location

SITE 1 TEST PIT LOCATION MAP